CLAIMS

1. A motor in accordance with the present invention comprising:

a rotor;

windings of a plurality of phases;

power supplying means, including a plurality of first drive power transistors and a plurality of second drive power transistors, for supplying electric power to said windings of a plurality of phases;

position detecting means for detecting the rotation position of said rotor in response to the terminal voltages of said windings of a plurality of phases;

activation controlling means for controlling activation to said windings of a plurality of phases by said power supplying means in response to a position signal output from said position detecting means;

commanding means for outputting a speed command signal; and

switching operation means for causing at least one of said plurality of first drive power transistors and said plurality of second drive power transistors of said power supplying means to perform high-frequency switching operation in response to said speed command signal;

and that said position detecting means is provided with position detection signal switching means that carries out switching between a detection signal for detecting the rotation position of said rotor and an inverted detection signal generated by inverting the logic of said detection signal and outputs the obtained signal in response to voltage comparison signals obtained by the comparison outputs between each of the terminal voltages of said windings of non-activation phases and the neutral point voltage of the common potential of said windings of a plurality of phases, and

the output signal of said position detection signal switching means is used as said position signal during the ON operation of said high-frequency switching operation.

2. The motor in accordance with claim 1, further comprising:

state judging means for making a judgment as to whether the rotation speed of said rotor, obtained on the basis of said position signal, is higher than a predetermined rotation number or not and for outputting a state judgment signal in the case when the rotation speed is higher than said predetermined rotation number, wherein

said position detection signal switching

means carries out switching between said detection signal for detecting the rotation position of the said rotor and said inverted detection signal generated by inverting the logic of said detection signal when said state judgment signal is input at least once.

3. The motor in accordance with claim 1, wherein said position detection signal switching means carries out switching between said detection signal for detecting the rotation position of said rotor and said inverted detection signal generated by inverting the logic of said detection signal when said position signal is input at least once.

4. The motor in accordance with claim 2, wherein said position detection signal switching means carries out switching between said detection signal for detecting the rotation position of said rotor and said inverted detection signal generated by inverting the logic of said detection signal when a signal obtained by the AND operation of said state judgment signal generated at least once and said position signal generated at least once is input.

5. The motor in accordance with claim 2, wherein

said position detection signal switching means is provided with switching operation judging means for making a judgment as to whether said high-

frequency switching operation is carried out or not, and

switching is carried out between said detection signal for detecting the rotation position of said rotor and said inverted detection signal generated by inverting the logic of said detection signal when a PWM operation state judgment signal obtained by the AND operation of a PWM operation signal output from said high-frequency switching operation judging means and said state judgment signal is input in the case when said high-frequency switching operation is carried out at least once.

6. The motor in accordance with claim 2, wherein said switching operating means outputs a third predetermined time including the time of change from OFF to ON of said high-frequency switching operation and a fourth predetermined time including the time of change from ON to OFF of said high-frequency switching operation as mask signals.

7. The motor in accordance with claim 5, further comprising:

forced high-frequency switching means for forcibly carrying out said high-frequency switching operation at least once within a second predetermined time in the case when said PWM operation signal is not output in response to said speed command signal within

a first predetermined time after the state of activation starting, wherein

said second predetermined time is set at a time elapsed until said state judgment signal is output.

8. The motor in accordance with claim 1, wherein said position detecting means detects the rotation position of said rotor by directly comparing the terminal voltages of said windings of a plurality of phases with the voltage at the neutral point of said windings of a plurality of phases or a neutral point voltage artificially formed from the terminal voltages of said windings of a plurality of phases.

9. The motor in accordance with claim 2, wherein said position detecting means detects the rotation position of said rotor by directly comparing the terminal voltages of said windings of a plurality of phases with the voltage at the neutral point of said windings of a plurality of phases or a neutral point voltage artificially formed from the terminal voltages of said windings of a plurality of phases.

10. The motor in accordance with claim 3, wherein said position detecting means detects the rotation position of said rotor by directly comparing the terminal voltages of said windings of a plurality of phases with the voltage at the neutral point of

said windings of a plurality of phases or a neutral point voltage artificially formed from the terminal voltages of said windings of a plurality of phases.

11. The motor in accordance with claim 4, wherein said position detecting means detects the rotation position of said rotor by directly comparing the terminal voltages of said windings of a plurality of phases with the voltage at the neutral point of said windings of a plurality of phases or a neutral point voltage artificially formed from the terminal voltages of said windings of a plurality of phases.

12. The motor in accordance with claim 5, wherein said position detecting means detects the rotation position of said rotor by directly comparing the terminal voltages of said windings of a plurality of phases with the voltage at the neutral point of said windings of a plurality of phases or a neutral point voltage artificially formed from the terminal voltages of said windings of a plurality of phases.

13. The motor in accordance with claim 6, wherein said position detecting means detects the rotation position of said rotor by directly comparing the terminal voltages of said windings of a plurality of phases with the voltage at the neutral point of said windings of a plurality of phases or a neutral point voltage artificially formed from the terminal

voltages of said windings of a plurality of phases.

14. The motor in accordance with claim 7, wherein said position detecting means detects the rotation position of said rotor by directly comparing the terminal voltages of said windings of a plurality of phases with the voltage at the neutral point of said windings of a plurality of phases or a neutral point voltage artificially formed from the terminal voltages of said windings of a plurality of phases.

15. A disk drive apparatus in accordance with the present invention comprising:

head means for at least carrying out signal reproduction from a disk or carrying out signal recording on said disk;

information processing means for at least processing the output signal of said head means and outputting a reproduced information signal or processing and outputting a recorded information signal to said head means;

a rotor for directly rotating and driving said disk;

windings of a plurality of phases;

power supplying means, including a plurality of first drive power transistors and a plurality of second drive power transistors, for supplying electric power to said windings of a plurality of phases;

position detecting means for detecting the rotation position of said rotor in response to the terminal voltages of said windings of a plurality of phases;

activation controlling means for controlling activation to said windings of a plurality of phases by said power supplying means in response to a position signal output from said position detecting means;

commanding means for outputting a speed command signal; and

switching operation means for causing at least one of said plurality of first drive power transistors and said plurality of second drive power transistors of said power supplying means to perform high-frequency switching operation in response to said speed command signal;

and that said position detecting means is provided with position detection signal switching means that carries out switching between a detection signal for detecting the rotation position of said rotor and an inverted detection signal generated by inverting the logic of said detection signal and outputs the obtained signal in response to voltage comparison signals obtained by the comparison outputs between each of the terminal voltages of said windings

of non-activation phases and the neutral point voltage of the common potential of said windings of a plurality of phases, and

the output signal of said position detection signal switching means is used as said position signal during the ON operation of said high-frequency switching operation.